Sept. 11, 1945. W. F. BRODZIK ET AL 2,384,723

PUTTING GREEN

Filed Jan. 19, 1942

FIG. 1.

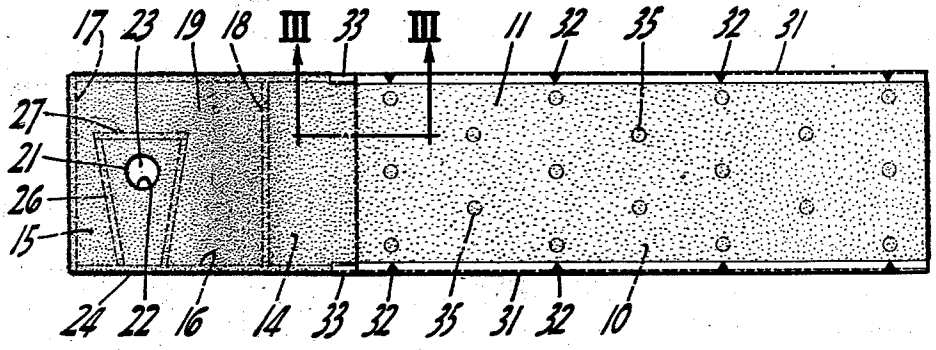



FIG. 2.

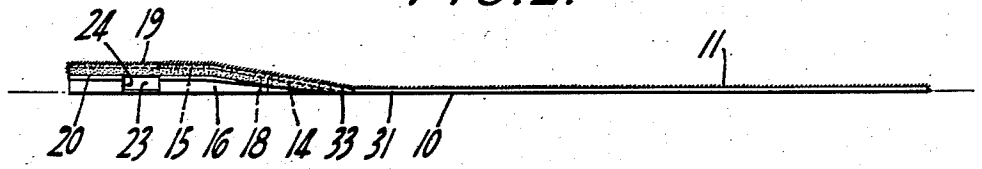



FIG. 3.

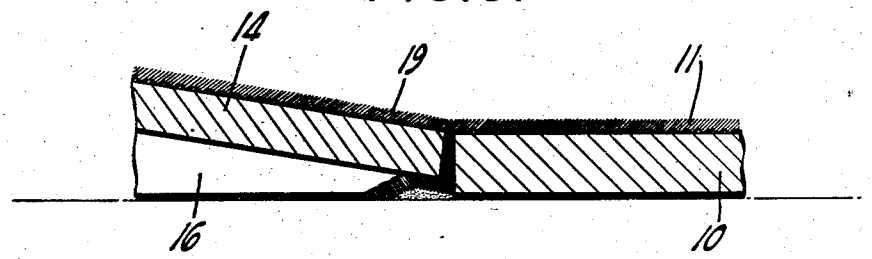
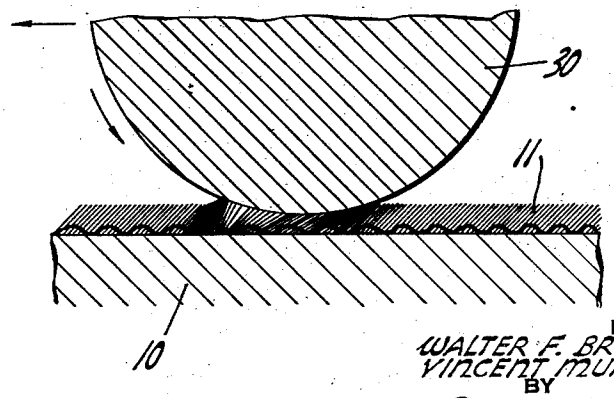



FIG. 4.




INVENTORS
WALTER F. BRODZIK &
VINCENT MURANYI
BY
Beau, Brooks, Buckley & Beau.
ATTORNEYS

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2,384,723

## PUTTING GREEN

Walter F. Brodzik and Vincent Muranyi, Buffalo, N. Y.; said Muranyi assignor to said Brodzik

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3 Claims. (Cl. 273—35)

This invention relates to game apparatus and has particular reference to a device for use as a golf putting surface, either for practice or for the playing of putting games.

Various artificial covering materials have heretofore been proposed for putting surfaces with a view to the production of a surface having the characteristics of a well-conditioned putting green. The chief end, of course, is to produce a surface which offers substantially the same degree of drag or resistance to the rolling of a ball thereacross. Great difficulty has been encountered in actual practice in producing such a surface. It is also imperative that the surface be such as to permit the ball to roll truly. A further requirement is that the surface be of a substantially stable nature, that is to say, that no intermittent treatment, either frequent or occasional, be necessitated for restoring the desired characteristics of drag or rolling friction to the surface.

Such fabrics as have heretofore been proposed have failed in attainment of the desired objectives. Ordinary woven or knitted fabrics are in general too "fast"; that is, they afford less than the required degree of rolling friction. Pile fabrics, in general, are too soft in their natures. For this reason they either offer insufficient rolling friction or, if fabrics having deeper pile be resorted to, directional characteristics are bad and results are highly erratic and irregular. Moreover, such deep pile fabrics vary in the direction which the individual tufts assume, particularly if the playing surface be walked upon in use, which is practically an indispensable incident of normal use.

We have discovered that by employing a pile fabric wherein the piles or tufts are of Angora mohair, or a fibre, either natural or synthetic, having substantially the same characteristics as to resilience and stiffness, we can, by arranging the inclination of the tufts in a particular manner, produce an ideal artificial putting surface which requires substantially no care or treatment such as brushing or the like to prepare or recondition the surface for use.

Various objects and advantages will appear from a consideration of the specific form of game apparatus described in the following specification and illustrated in the accompanying drawing. While a single specific embodiment is set forth herein by way of example it is to be understood that the spirit and scope of my invention is not limited otherwise than as defined in the appended claims.

In the drawing:

Fig. 1 is a top plan view of one form of the game apparatus of our invention;

Fig. 2 is a side elevational view thereof;

Fig. 3 is an enlarged fragmentary cross sectional view taken approximately on the line III—III of Fig. 1; and

Fig. 4 is a further enlarged fragmentary cross sectional view taken longitudinally of the device and showing the action of a game ball in rolling thereacross.

Throughout the several figures of the drawing like characters of reference denote like parts and the numeral 10 designates a flat panel which is preferably rigid and self sustaining. A non-warping material is desirable and a panel of pressed wood, known in the trade as hard board, is highly suitable, although ply-wood or the like may also serve. The panel 10 has stretched over its upper surface a pile fabric having the characteristics indicated above and designated 11 in the drawing. The fabric 11 is stretched taut and is preferably secured to the marginal portions of the bottom surface of the panel 10. It is important that the fabric be secured firmly along all four edges of the panel since it has been found that uniform tautness of the fabric is an important requirement in the production of the highly satisfactory playing surface brought into being by means of the present invention.

A second surface element cooperates with the fabric covered panel 10 and such second element comprises a ramp panel portion 14 and a contiguous platform panel portion 15, the two being held at desired elevations by means of longitudinal side rails 16 and transverse rails 17 and 18. Fabric 19 is stretched over the panel portion 14 and 15 as a unit. The edge of the panel 14 which, in use, is disposed in abutment with an edge of the panel 10, as appears from Figs. 1, 2 and 3, may have the fabric wrapped thereabout as in the case of the panel 10. With respect to the remaining three edges the cloth may merely be tacked or otherwise secured against the sides of the rails 16 and 17. In Fig. 2 the numeral 20 designates the untufted selvage of the fabric.

The platform panel portion 15 is provided with an opening 21 preferably the diameter of a golf cup and the fabric covering may be brought in around the inner periphery of the opening 21 as at 22, the fabric being firmly secured to the under side of the panel 15 about the opening 21. In the illustrated form an inclined panel 23 causes balls dropping through the hole to roll

toward an opening 24 formed in one of the side rails 16. Confining rails 26 and 27 extend between the underside of the panel 15 and the inclined panel 23 to guide balls to the opening 24.

Coming now to the particular pile fabric employed and the precise nature in which its tufts are arranged to cooperate, attention is directed to Fig. 4. As there viewed a ball 30 is shown fragmentarily and is rolling from right to left. It will be noted that the pile of the fabric is inclined at an angle of about forty-five degrees against the direction of travel of the ball. This inclination and the character of the Angora mohair fibre, as to stiffness or elasticity, is found to produce an ideal reproduction of the effects of a golf ball rolling on a well conditioned putting green. The probable positions which the tufts of the pile assume successively in the passage of a ball thereover are indicated diagrammatically in Fig. 4.

By bringing the fabric coverings 11 and 19 of the panels 10 and 14 respectively down over the abutting edges of those panels, as shown in Fig. 3, the piles of the two abutting fabrics interlock to an extent sufficient to produce a continuous upper surface having the same rolling frictional characteristics as if a single unbroken pile fabric were present over the joint. Any desire to actually employ a single fabric covering for the two relatively movable panel portions 10 and 14 is ruled out by the necessity for an extremely taut condition of the pile fabric for proper rolling characteristics, both as to friction and accurate direction. It is desired that the piles of the fabrics 11 and 19, where they adjoin, be exactly the same height. In actual practice, however, some manufacturing tolerance should be provided and this tolerance should result in the pile of the fabric 11 being at least as high as that of the fabric 19. The normal roll of the ball will be affected much less by a small drop at the juncture of the two fabrics than by a corresponding rise. With this in mind, and also the possibility of depression of the panel 10 under the weight of a player, it has been found advantageous in some instances to arrange the thickness of the panel 10 and the height of the panel portion 14 so that the height of the pile of the fabric 11 is very slightly higher than that of the fabric 19 at the line of juncture of the two.

In the illustrated form I have shown a trim strip 31 along each longitudinal edge of the panel 10. These trim strips may be of angular cross section and have flanges extending downwardly along the edges of the panel 10. The strips are preferably sufficiently thin to merely compress the pile along the longitudinal edges of the panel 10 and thereby dispose the upper surface of the strips below the upper surface of the pile proper. Distance markers 32 may be arranged along the trim strips 31 and in the illustrated form extensions 33 of the trim strips 31 are shown affixed to the ramp panel portion 14.

The several dotted circles 35 indicate a system of golf practice which may be pursued in using the instant apparatus. By placing a number of balls, eighteen in the present example, in the positions shown, using the markers 32 to facilitate arrangement, one may successively putt them into or toward the hole 21, thereby executing a succession of putts varying in angle and distance.

What is claimed is:

1. Golf putting apparatus comprising a surface presenting a longitudinal ball path, said surface comprising a rigid panel having a covering thereover comprising tightly stretched mohair pile fabric with the pile extending outwardly, and an opening in said fabric and said panel at one end of said longitudinal ball path, the mohair pile of said fabric being inclined substantially against the normal direction of ball movement along said longitudinal path.

2. Golf putting apparatus comprising a surface simulating a putting green, said apparatus comprising a plurality of horizontally contiguous rigid panel sections, each panel section having a covering thereover comprising tightly stretched mohair pile fabric with the pile extending outwardly, the pile fabric extending around the contiguous edges of the said panel sections whereby the piles abut along said edges to produce a continuous pile surface of uniform rolling friction characteristics, the mohair pile of said fabric being inclined substantially against the normal direction of ball movement along said longitudinal path.

3. Golf putting apparatus comprising a surface simulating a putting green, said apparatus comprising a plurality of horizontally contiguous rigid panel sections, each panel section having a covering thereover comprising tightly stretched mohair pile fabric with the pile extending outwardly, the pile fabric extending around the contiguous edges of the said panel sections whereby the piles abut along said edges to produce a continuous pile surface of uniform rolling friction characteristics, one of said panel sections having a hole for receiving a golf ball, the other of said sections being slightly higher than the one section at their contiguous edges, the mohair pile of said fabric being inclined substantially against the normal direction of ball movement along said longitudinal path.

WALTER F. BRODZIK.
VINCENT MURANYI.